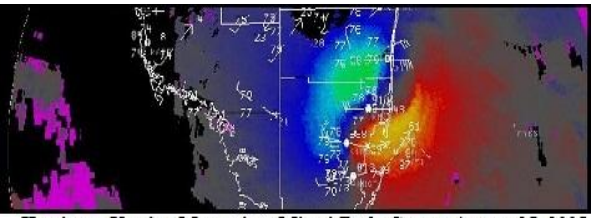
Tropical Winds

The Official Newsletter of WFO Miami



Hurricane Katrina Moves into Miami-Dade County August 25, 2005

Issue 6 – Fall 2011

Welcome to the fall 2011 edition of the Tropical Winds. We are quickly approaching the peak of the 2011 hurricane season with a couple of systems already nearing South Florida, Tropical Storm Emily and Major Hurricane Irene. Around half of the hurricane season is yet to come with the statistical peak arriving in early to mid-September. On average if South Florida is to get affected by a hurricane in any given year the date averages to September 21st, with most hurricanes affecting the area during early to mid October, so it is never too early or too late to plan for an event such as a land falling hurricane. In this issue we will discuss the hurricane season along with a few other topics affecting the area and your South Florida National Weather Service Office.

In This Issue…

Downtown Miami from across Biscayne Bay - Dan Gregoria

By Andrew Tingler

June through August Review

The dry pattern that persisted across South Florida from late 2010 continued into June, and in fact, Miami Beach recorded its driest June on record with only 1.15 inches of rain for the entire month. But the area was not without exception; Miami International Airport recorded 12.22 inches during the same period. Average temperatures for the month of June were also slightly above normal as less cooling rain occurred. July and August brought in near average

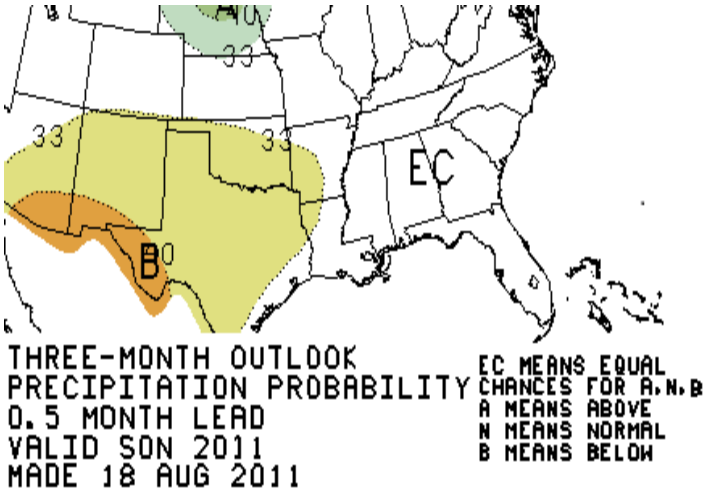
rainfall across the area along with slightly above normal temperatures. The near normal rainfall amounts helped to somewhat ease the drought conditions even though long-term rainfall deficits remained.

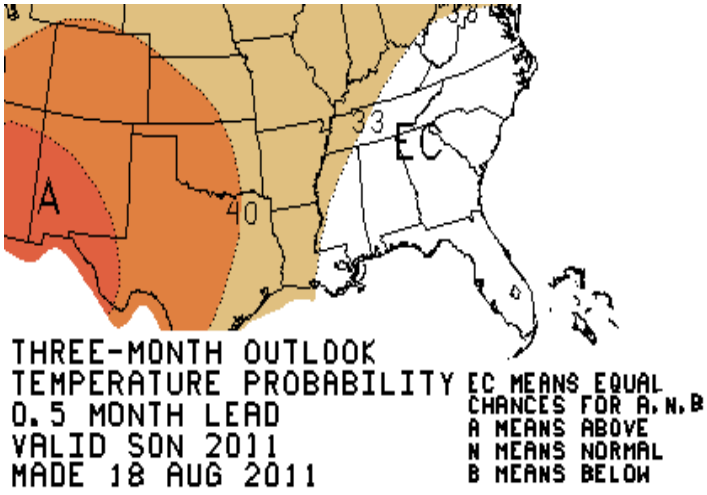
For more information on the weather during the summer months click on the links below.

June **July** **August**

September through November Outlook

The Climate Prediction Center's (CPC) three month forecast for South Florida is that of roughly average temperatures and precipitation. With that said, the average high temperature across South Florida in September is around 90 degrees with the average low in the mid-70s. Average rainfall for the month of September is 8 to 10 inches. October is a month of transition with the dry season starting on average during October 17, although there have been instances of it starting as early as the end of September and as late at the beginning of November. November is normally the first full month of the dry season with average highs in the low 80s and low temperatures in the 60s. Average rainfall for the month of November along the gulf coast is around 2 inches with rainfall totals along the east coast slightly higher at 3 to 5 inches. The CPC December through February forecast indicates the possibility of below normal precipitation for Florida as La Niña returns.



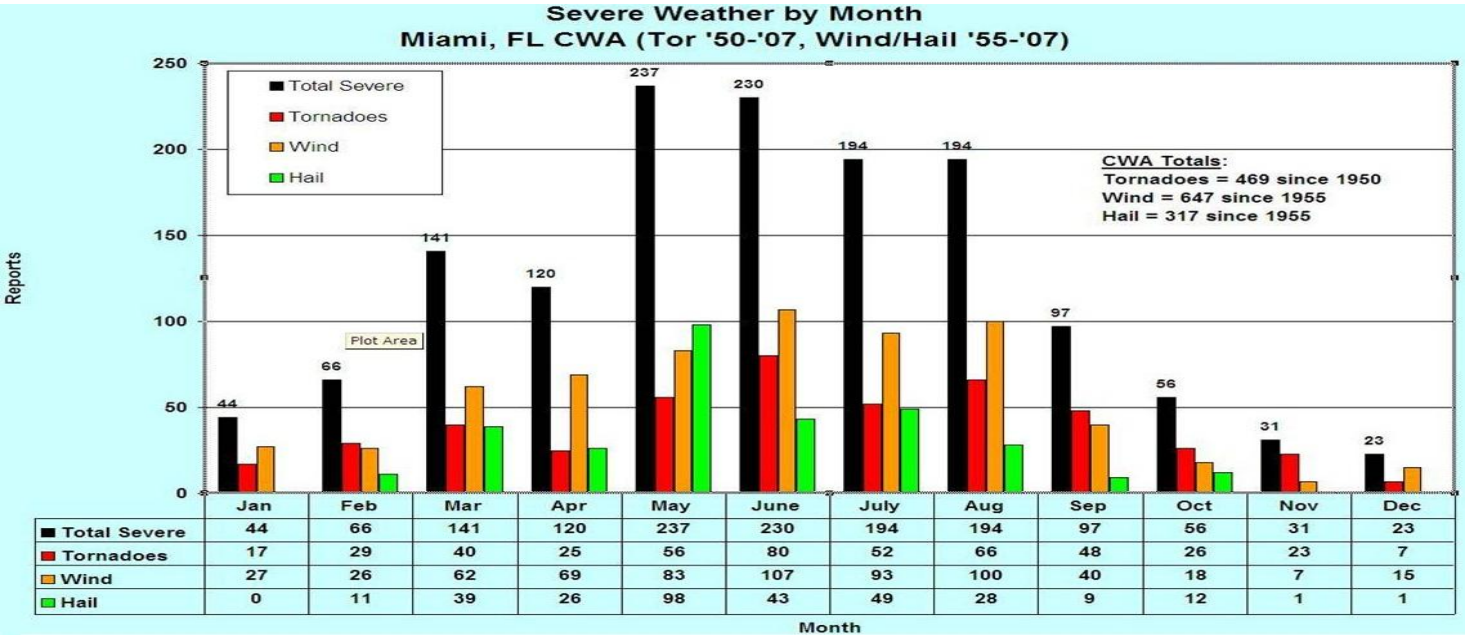


Severe Weather

Hail in Weston - pictured by J. Bartleman and relayed by Craig Setzer June 12, 2011

By Andrew Tingler and Dan Gregoria

South Florida is generally not known for its severe weather outbreaks, outside of hurricanes of course, however in reality, the area is prone to occasional severe storms and tornadoes. The most common time of the year for severe weather is in the late spring and early summer when mid-levels of the atmosphere are still cooler, low level moisture is on the increase, and mid latitude systems occasionally push near or into the area providing lift. This year has been no exception even with reports of golf ball sized hail, a wind gust of 86 MPH in Naples with a line of thunderstorms, and a couple of tornadoes observed or reported. A couple of the severe weather events are highlighted below.



	Jan	Feb	Mar	Apr	May	June	July	Aug	Sep	Oct	Nov	Dec
Total Severe	44	66	141	120	237	230	194	194	97	56	31	23
Tornadoes	17	29	40	25	56	80	52	66	48	26	23	7
Wind	27	26	62	69	83	107	93	100	40	18	7	15
Hail	0	11	39	26	98	43	49	28	9	12	1	1

Hail in South Florida

A couple of storms have been capable of creating golf ball sized hail so far this year and they affected areas along the northwest shore of Lake Okeechobee and portions of Broward County. In late April a pair of severe thunderstorms affected Buckhead Ridge in Glades County with hail of 1.75 inch in diameter hail. The storm then intensified even farther and produced a report of baseball sized hail (2.75") upon entering Okeechobee County, which is in NWS Melbourne's area. Another severe storm developed in Broward County in June and affected the west suburbs of Broward County. Winds of around 70 MPH and hail of up to 2" in diameter were observed. The image to the bottom left contains a Three Body Scatter Spike and that is a good indicator of hail. The TBSS forms when energy from the radar beam is sent out from the radar, reflected from the hail to the ground, then reflected from the wet ground back up to the in cloud hail then back to the radar. The radar normally just receives data directly back from rain drops, but the extra distance the energy travels to the ground and back when large hail is present shows up as a spike on the opposite side of the storm from the radar location which in this case is located near Zoo Miami.

A TBSS is observed from a severe thunderstorm over Miramar and Pembroke Pines, June 12, 2011.

Hail in Weston. Pictured by Jonathan Lord sent in by Craig Setzer.

Tornado in Tamarac and North Lauderdale

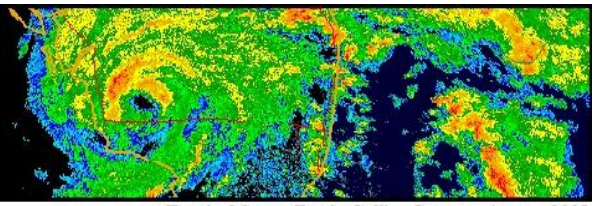
A tornado developed over the western suburbs of the greater Fort Lauderdale metropolitan area at 5:03 PM EDT Tuesday, August 2nd, affecting portions of Tamarac and North

Lauderdale. The overall atmospheric environment was generally not favorable for tornado formation on this day as wind shear, or changing winds with height, was typically low for the summertime in South Florida. However, this tornado developed quickly on the collision of two thunderstorm "outflow boundaries". These boundaries are generated by rain-cooled air spreading out from the downdraft of the thunderstorms. When thunderstorm outflow boundaries collide, they can generate enough "spin" and lift to cause the formation of a tornado…and such was the case on this day. It was determined that the tornado had a maximum wind speed of 90 MPH which has a rating of EF1 on the Enhance Fujita Scale. This rating is on the low end of the scale, which rates tornado strength from EF0 to EF5. The damage path was approximately one mile with a maximum width of 90 yards. Damage was mostly confined to roofing material and trees, with a roof partially peeled off one home and frame windows broken and blown out from a couple of others. Fortunately, there were no reported injuries associated with this tornado.

Photo of the tornado, courtesy of Dee Nevaras, Skywarn Spotter

Tornadic circulation as seen on the Ft. Lauderdale Terminal Doppler Radar at 5:03 PM EDT (Base Storm Relative Motion data). The blue and red adjacent to each other depicts the tight rotation of the tornado.

Hurricane Season 2011



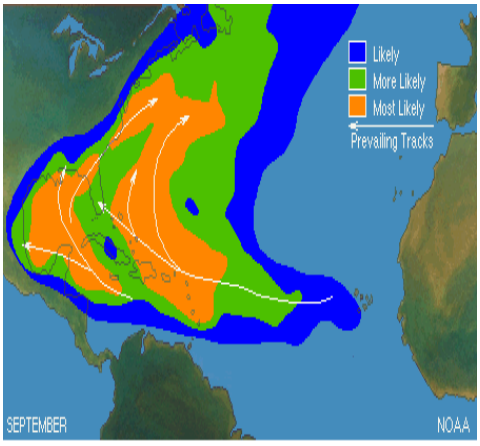
Tropical Storm Fay in Collier County - August 2008

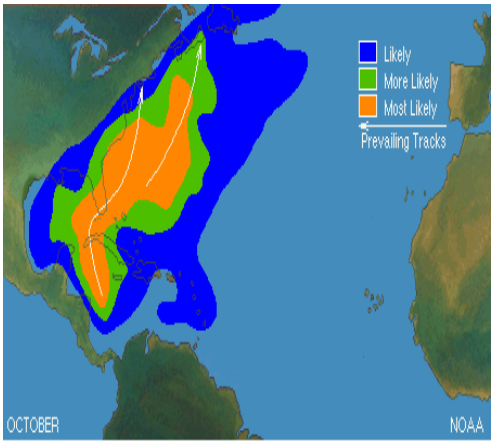
By Andrew Tingler

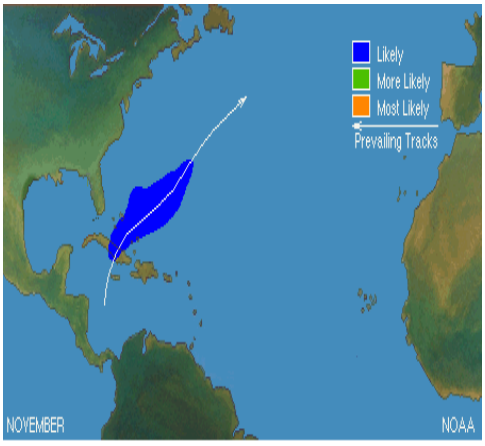
The 2011 hurricane season continued on a very busy schedule through the first week of September with Maria and Nate forming by the 7th. While only 2 hurricanes (Category 3 Irene and Category 4 Katia) have formed to date named systems continue to form at a high rate placing this season on par with some of the busiest in recorded weather history. So far 2 tropical cyclones, Tropical Storm Emily and Hurricane Irene, brushed by South Florida with mostly minimal effects. Some of the higher gusts in South Florida associated with the outer bands of Hurricane Irene when it passed through the Bahamas where: West Palm Beach 53MPH, Lake Worth Pier 51MPH, Boca Raton 47MPH, Pompano Beach 45MPH, Deerfield Beach 42MPH, and Fort Lauderdale 41MPH.

A continuation of the busy season is very likely through November as La Niña conditions and very warm sea surface temperatures remain. An average tropical season consists of 11 named systems, 6 hurricanes, and 2 major hurricanes, and to date for 2011 the Atlantic basin has seen 14 named storms, and 2 hurricanes with both being major.

The images below indicate where tropical cyclones are more likely to occur through the next few months, according to climatology, with the orange areas indicating the most likely location of occurrence.







By Robert Molleda

StormReady® Helps Save Lives and Builds a *Weather-Ready Nation*

When dangerous weather affects South Florida, it's the responsibility of the staff at the National Weather Service's Miami Forecast Office to issue warnings, watches, advisories, and statements so that people can take quick and protective actions for themselves, their families, schools and businesses. While NWS warnings are the primary means of warning the public of impending hazardous weather, a critical component of the NWS warning program involves advanced planning, education and awareness on the part of communities working together with the National Weather Service. This partnership between communities and the NWS is formalized through the StormReady® program. StormReady® ensures that communities all across South Florida and the rest of the country have the tools, procedures and immediate access to critical weather information necessary to be informed and to act in the event of a weather hazard.

WFO Miami Meteorologist-in-Charge Dr. Pablo Santos (left-foreground) and Warning Coordination Meteorologist Robert Molleda (right-foreground) present the StormReady® ***County sign to Dan Summers, Collier County Emergency Management Director at the meeting of Collier County Commissioners on June 28th, 2011.***

The StormReady® program is an integral part of the National Weather Service's *Weather-Ready Nation* campaign, an initiative aimed at 1) understanding the weather-related threats we face as a community, 2) equipping communities with the necessary tools and information and 3) adapting to new technologies and communication to better inform and warn communities of weather-related hazards.

In order for a community to become StormReady®, a series of guidelines need to be met, including the following: a 24-hour warning point and Emergency Operations Center (EOC), NWS Information Reception, Local Weather and Water Monitoring Equipment, Local Warning Dissemination and Community Preparedness Activities and Talks. Depending on the size of the community, as many as four different ways of receiving, monitoring and disseminating NWS warning information is required. In addition, a community must have a formal hazardous weather operations plan including EOC activation and procedures for reporting storm damage to the NWS, organize and/or participate in yearly or biennial National Weather Service SKYWARN training classes, and mutual visits by the local NWS office and the community emergency manager to their respective facilities on a yearly basis. A representative from the local NWS office and a local emergency manager visit the community and perform a site visit to make sure all guidelines are met, followed by final approval by the local StormReady® Advisory Board. The StormReady® recognition lasts 3 years and must be renewed by following the same procedures.

In addition to the assurance that communities have the proper means by which to keep their citizens safe from weather-related hazards, StormReady® communities receive Community Rating System points which can help to reduce insurance costs.

In South Florida, all six counties in the NWS Miami area of responsibility (Broward, Collier, Glades , Hendry, Miami-Dade and Palm Beach) are StormReady®, as well as two universities (Florida Atlantic and Florida International), one municipality (Miami Beach) and two subdivisions/developments in Collier County (Mediterra and Twin Eagles). This year alone, Collier, Glades, and Miami-Dade counties have successfully renewed their StormReady® recognition, as well as Florida Atlantic University and first-timer City of Miami Beach. Later this year, Florida International University will be up for renewal, with Broward, Hendry and Palm Beach counties up for renewal in 2012.

For more information on StormReady®, please visit this web site. You can also contact Robert Molleda, Warning Coordination Meteorologist, at 305-229-4522, Ext 223.

Employee Spotlight

Cape Florida Lighthouse - Andrew Tingler - April 2010

By Dan Gregoria and Evelyn Rivera

Spotlight on… Dan Gregoria, Lead Meteorologist

1. How did you get interested in meteorology?

I can't imagine not being interested in meteorology! Weather surrounds us in our daily lives and can change in an instant, especially where I grew up in Duluth, Minnesota. Duluth is located on the west tip of Lake Superior, where temperatures can be as low as -40F degrees in the winter and top 100F degrees in the summer. Snow is piled several feet high in the winter, only to be replaced by lush green vegetation in the summer. Blizzards, severe thunderstorms, the "cooler by the Lake" factor…where winds off of the cold Lake Superior waters often keep coastal locales in the 40s in the spring, while inland locations are enjoying temperatures in the 70s and 80s – all of this sparked my interest in weather. But also my father's interest in weather had an influence. My father created the idea and character of the "Weather Wizard" for KZIO radio in Duluth. He thought he could out forecast the meteorologists and, "broadcasting from the bell tower of St. Scholastica" he would give his wizardly forecast every weekday morning…and did a good job at it I must say! He retired the character several years ago. However, now that I'm a meteorologist, the wizard in him still comes out. He will try to out-forecast me, and sometimes wins, but that's the beauty of meteorology. It's an in-exact science and there is much to be learned in the realm of weather and forecasting.

2. Where did you go to school?

I obtained a Masters Degree in Atmospheric Science from the University of Wisconsin – Madison. Great school, great city!

3. What was the most difficult class? Why?
Geophysical Fluid Dynamics. Need I say more?! ;-)

4. Tell me about your NWS career so far.
I started my career at NWS Little Rock, Arkansas as an Intern in 2000. In 2001, I was promoted and transferred to NWS San Juan, Puerto Rico (que lindo!) as a General Forecaster and served there for just over 2 years. In 2004, I transferred to NWS Miami and in 2006 was promoted to a Lead Forecaster position at Miami, the position I currently serve today.

5. What's the best/worse part of your job?
The core mission of the National Weather Service is the protection of life and property. We do this through providing advanced warnings of hazardous weather and by providing decision support services to our users. Working the radar and issuing warnings is my favorite part of the job, because it's the most important function we serve, but I really enjoy the daily forecasting duties as well. The worse part of my job? I would have to say the re-adjusting of work schedules. We work day shifts one week, night shifts the next, then evening shifts the following, and so on. So when you are working nights, you have to sleep during the day, but then you have to re-adjust your body clock to go back to sleeping at night for the next set of shifts. This adjustment takes at least a few days and can be quite difficult. Shift work does offer time off during the day when stores and such are less crowded, and that's a definite perk!

6. What do you do when you are not working?
I love travelling, nature, watching TV (favorite is "The Big Bang Theory") and movies (favorite is "Contact"), watching and playing tennis, listening to music, and yes….watching the weather! My passion for weather doesn't stop at the office door. In fact, it begins there.

Thanks for Reading!

The Ochopee Post Office - The Smallest Post Office in the Country - Andrew Tingler - June 2011

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